
Research Notes

A Review of Dynamic Assessment: Recent Developments in L2 Contexts

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【Abstract】

This article outlines the recent developments in dynamic assessment (DA) in language education. Grounded in Vygotsky's zone of proximal development, DA, a dialectic integration of instruction and assessment, has great influence on assessment practices in domains such as general education and psychological development. Recently, DA has caught the attention of educational practitioners and scholars in language education who are interested in exploring its relevance and application to second language (L2) pedagogy. DA is a promising pedagogical tool to help examine what might have been missed in the process of conventional assessment and promote learning potential in L2 settings. In this article, theories that underpin DA developed by Vygotsky and Feuerstein, its definition, two major approaches, recent studies in L2 contexts, and its implications, are discussed.

Key words: dynamic assessment, zone of proximal development, mediation, learning potential, second language context

研究ノート

ダイナミック・アセスメント －第二言語コンテキストにおける最近の発展－

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【要 旨】

本稿は、言語教育におけるダイナミック・アセスメント (DA) の最近の発展について概説する。Vygotsky の発達最近接領域の概念を基盤とした、指導と評価の融合である DA は、これまで一般教育や心理的発達などの分野で実践的評価方法として大きな影響を及ぼしてきた。近年、DA は第二言語 (L2) 教育への応用を目的とした、言語教育分野の教育実践者や研究者の間に注目を集めている。DA は、従来の評価の過程で見逃されていた可能性のあるものを調査し、L2 環境下での学習可能性を促進する教育的方法として期待されている。本稿では、Vygotsky と Feuerstein によって創られた DA 理論および定義、主要な 2 つの手法、最近の L2 コンテキストでの研究、さらに研究的示唆について言及する。

キーワード：ダイナミック・アセスメント、発達の最近接領域、媒介、学習可能性、第二言語コンテキスト

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1. Introduction

People experience several tests or assessments as they move through different phases in their life. These tests are mostly a variety of conventional or static tests in which test takers “receive a set of test items and solve these items with little or no feedback” (Sternberg & Grigorenko, 2002, p. 23). They include standardized tests such as IQ tests, entrance exams, and language proficiency tests that may determine our academic and professional opportunities. Assessment is a crucial and indispensable part of education that measures what learners can currently perform. Assessment in education generally takes the form of non-dynamic assessments (NDA)¹⁾ to examine what a test taker has learned so far and what they can do independently at the time of the test. Standardized tests compare one person’s performance with others from similar demographics to measure the *zone of actual development*, or their actual development level (Haywood & Lidz, 2007), while standardized test scores can be a good predictor of subsequent academic achievement of large groups (Haywood & Tzuriel, 2002).

Previous studies, however, have shown shortcomings in standardized tests. For example, test scores in an intelligence test have failed to accurately estimate the abilities of children from low socioeconomic backgrounds or with learning difficulties (Haywood & Tzuriel, 2002). Moreover, non-dynamic tests were found to be inferior to dynamic assessment (DA) in which instruction and assessment are dialectically integrated, when comparing different groups of cultural backgrounds, as these children performed better in DA (Haywood & Tzuriel, 2002). In response to these critiques, DA was developed as an alternative to non-dynamic types of assessments. DA has had a great impact on assessment practices in domains such as general education and psychological development (Lantolf

& Thorne, 2006), given the belief that DA can help examine what might have been missed in the conventional NDA.

DA, which is conceptually rooted in Vygotsky’s zone of proximal development (ZPD), has been further developed by Feuerstein’s DA model, which has resulted in a heterogeneous range of approaches to DA (Elliot, 2003). DA approaches are valuable because they provide qualitative information on learner’s capabilities, and are less biased compared to NDA with regards to test anxiety and lack of self-confidence (Meijer, 2001).

However, validated evidence for DA is scarce except for case study reports by educational school psychologists. Thus, systematic and controlled studies have been called for to look at the differential impact of interventions on dynamic versus non-dynamic approaches (Elliot, 2003; Elliot et al., 2018). In the domain of language education, DA has caught the attention of educational practitioners and researchers who are interested in exploring its relevance and application to second language (L2) pedagogy (Lantolf & Thorne, 2006). DA proponents in this field believe that it is a promising pedagogical tool to better assess both actual development levels and learning potential in an L2 context. However, an overview of the concept of DA and the relevant literature in relation to language education is currently lacking. Therefore, this article attempts to outline the theories underlying DA as developed by Vygotsky and Feuerstein, provide a definition of DA, explain the two major DA approaches, and describe some recent DA studies in the field of language education in L2 contexts.

2. History and theories underlying DA

2.1. Vygotsky’s ZPD

Lev Vygotsky, a Russian psychologist, was critical of assessments that measured the capability of independent performance and asserted that the

underlying sources of one's development were more important (Ghahari & Nejadgholamali, 2019). For Vygotsky, these underlying sources were social interaction with others, including teachers, peers, and collaborators, etc. (Elkonin, 1998); he believed such interaction to be essential for development (Davin, 2016). Vygotsky posited that "through social interaction, children internalize sign systems that become psychological tools and restructure their mental functions, leading to self-regulation and concept-based regulation" (Davin, 2016, p. 814).

DA is grounded in Vygotsky's Sociocultural Theory of Mind, specifically, the zone of proximal development (ZPD) (Lantolf & Thorne, 2006; Poehner et al., 2014). The ZPD has a wide range of interpretations (Kinging, 2002; Poehner, 2008a; Poehner & van Compernelle, 2011) and according to Lantolf and Thorne (2006), the most often referenced definition of the ZPD is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). In other words, the ZPD is defined as the difference between the current developmental level and the potential developmental level achieved under guidance at the time of assessment. The ZPD provides insights into an individual's learning abilities that emerge in the developmental stage and indicates their capacity for cognitive modifiability (Dörfler et al., 2009). Vygotsky (1998) also stressed in his work that the emergent cognitive function represents part of an individual's mental ability or their actual developmental level, and that their responsiveness to assistance is the key to recognizing their cognitive ability, which can help predict their future development (Lantolf & Thorne, 2006).

Based on the ZPD, Alexander Luria, a colleague of Vygotsky, first introduced the concept of DA in

his paper in English outside the Soviet Union by contrasting statistical and dynamic approaches in assessment (Lantolf & Thorne, 2006; Poehner & Lantolf, 2005). Luria pointed out that the former approaches, which although psychometrically sound, measure only what an individual can perform independently on a test, and do not necessarily represent the whole picture of learners' capabilities. To obtain a complete understanding of their capabilities, he argued that the latter approaches need two important pieces of information: the learners' performance with help from the mediator and the extent to which they can improve with this help in completing the same task and in transcending this mediated performance to other tasks (Lantolf & Thorne, 2006; Poehner & Lantolf, 2005). Luria (1961) further proposed that "the most important problem is that we have to pay more attention not only to the diagnosis, but also to the prognosis of the developmental potential of these children" (p. 5). His work had a great impact on subsequent DA research by using the term "dynamic" to distinguish assessment procedures with the ZPD concept from traditional assessment procedures and by proposing the pretest-intervention-posttest procedure as well as transfer tasks (Poehner, 2008b).

2.2. Feuerstein's MLE and LPAD

Feuerstein was concerned that children's potential was often underestimated, which would consequently lead to low expectations from teachers and misplacement of students in special education (Elliot, 2003). Central to Feuerstein's DA approach (1988) is the *mediated learning experience* (MLE), a construct of cognitive skill development which is in line with Vygotsky's concept of ZPD (Isman & Tzuriel, 2008; Lantolf & Poehner, 2004; Lantolf & Thorne, 2006; Sternberg & Grigorenko, 2002). MLE is defined as "a special quality of mediated interaction between the child and environmental

stimuli” which “is achieved by the interposition of an initiated and intentioned adult between the stimuli of the environment and the child” (Kozulin & Presseisen, 1995, p. 69). Feuerstein proposed that the mediated interaction in MLE require three attributes: intentionality and reciprocity, transcendence, and meaning²⁾ (Isman & Tzuriel, 2008; Kozulin & Falik, 1995; Kozulin & Presseisen, 1995). When sufficient MLE interactions are afforded, it is presumed that “the development of various cognitive functions, learning sets, mental operations, strategies and need systems” are facilitated (Isman & Tzuriel, 2008, p. 547).

Based on the attributes of MLE, Feuerstein developed a dynamic procedure called the *Learning Potential Assessment Device* (LPAD) that consists of well-known standardized assessment instruments³⁾ and some instruments specifically designed for the LPAD to assess the learner’s modifiability, which is the capacity to modify the cognitive structure of themselves with flexible interaction and effective mediation (Elliot, 2003; Lantolf & Thone, 2006; Sternberg & Grigorenko, 2002). The LPAD transformed the practice of assessment in major areas such as the structure of the instruments that include verbal and nonverbal tasks to measure specific skills (Sternberg & Grigorenko, 2002).

Feuerstein’s comprehensive DA approaches proved a seminal influence and have contributed to the popularization of the qualitative aspect of DA approaches (Hayashi & Takahashi, 2015; Poehner, 2008b; Poehner et al., 2014). However, his work has also been critiqued (Elliot, 2003; Hirata, 2011). For example, there are claims that test reliability⁴⁾ is not taken into consideration in his assessment procedures in the LPAD, especially when interaction between examiner and examinee is not normative, and interventions by the examiner might have changed to suit the examinee’s needs (Elliot, 2003).

3. What is DA?

DA, rooted in the concept of development within the ZPD, was developed as an alternative to conventional non-dynamic types of assessment. In DA, “assessment and instruction are dialectically integrated as the means to move toward an always emergent (i.e., dynamic) future” (Poehner, 2005, p. 20). DA focuses on helping learners improve their performance, which they cannot do independently, and develop to the next level through assistance from the mediator. As Luria (1961) stressed, development must go beyond mastering the task at hand and encompass the transfer of what has been internalized through assistance to other circumstances. Assistance or mediation starts with *other-regulation* where the learner relies on the mediator and moves to *self-regulation* where the learner relies on the self, to bring about learner’s cognitive development (Aljaafreh & Lantolf, 1994). This transformation is determined by the frequency and quality of help that the learner received from the mediator until they can complete the task at hand.

In DA, it is important to construe the future (Poehner & Lantolf, 2005), which is in line with the future-in-the-making perspective found in developmental psychology, in that future performance is predicted to differ from current performance (Valsiner, 2001). Based on this perspective, ability in assessment is regarded “not as a stable trait but as a malleable feature of the individual and emergent from the activities in which the person participates” (Lantolf & Pohner, 2004).

Furthermore, what differentiates DA from conventional NDA approaches such as formative assessment is sensitivity to the ZPD; while formative assessment provides feedback on students through tests and teacher observations for subsequent teaching decisions, DA emphasizes dialogic collaboration between the mediator and the learner (Poehner, 2008b). As another difference,

varying degrees of intervention are provided in combination with instruction in DA, unlike NDA that represents individuals' independent performance (Poehner, 2005). Moreover, in the DA paradigm, non-dynamic and dynamic assessments refer to the administration procedures, not the assessment instruments. Also, non-dynamic and dynamic assessments are distinct in their underlying beliefs concerning the stability or modifiability of cognitive functions (Poehner, 2005).

Another characteristic of DA is the type of feedback which Poehner and Lantolf (2005) termed *mediated assistance*. These mediations in DA are positioned in two formats: the sandwich format and the cake format (Sternberg & Grigorenko, 2002). In the sandwich format, mediation is placed between pretest and posttest (pretest, intervention/training, and posttest), while the cake format takes the form of the pretest and posttest with intervention provided when difficulties are encountered during the assessment process (Elliot, 2003).

4. Two approaches to DA

Lantolf and Poehner (2010) claim that DA advocates are convinced that independent performance does not reflect a full picture of one's abilities and that important insights are gained through mediation when learning difficulties emerge. However, there are a wide range of DA practices in terms of the quality of mediation used during assessment as well as the way DA sessions relate to ongoing instruction. Therefore, Lantolf and Poehner (2004) proposed two approaches to DA, namely the interventionist and the interactionist approach. Both approaches concern learner's potential development, but they are different in how they conceptualize DA (Lantolf & Poehner 2010); the former concerns the quantitative assessment procedure to identify learners' potential for future development, while the latter employs qualitative assessment approaches to help learners

realize their potential (Lantolf & Thone, 2006; Poehner, 2008a).

In interventionist approaches, tasks and materials are selected and analyzed to predict what possible problems the learner may encounter. Mediation moves such as prompts, hints, and leading questions are pre-scripted and standardized in a hierarchical order, ranging from implicit to explicit. During DA, the mediator provides assistance according to the order of the pre-scripted mediation moves, from hint to hint until the learner responds correctly or until the final hint is provided with the solution and explanation (Lantolf & Poehner, 2010). On the other hand, interactionist approaches impose no restrictions on mediation and provides any possible mediation moves to enable the learner to go beyond their current independent performance (Lantolf & Poehner, 2010). Interactionist DA seems to be more in line with a qualitative interpretation of Vygotsky's ZPD, as it is more sensitive to an individual learner's ZPD.

5. DA studies in language education

In general, DA studies from the perspective of language education in an L2 context involve one-on-one interaction or classroom DA. In this section, four of the recent DA studies are reported based on their approaches. The first two studies are interactionist DA and the third one is interventionist. As for the fourth study reviewed, whether the study is interactionist or interventionist is not clear.

5.1. L2 Spanish placement

Antón (2009) took an interactionist approach to DA for five third-year Spanish language majors at a US university for placement purposes. A non-dynamic entry exam was placed prior to a mediated learning experience, during which the mediator provided tailored assistance to the students' ZPD in speaking and writing tasks.

In the writing section, students were assigned a

task where they had to write about their past and present experiences with language learning and their plans after graduation with a degree in Spanish, followed by revision phases in which they read their composition while using a dictionary and a grammar manual for revisions where needed. Finally, students were given a chance to ask the mediator questions for further revisions. Students' compositions were evaluated based on writing scores as well as the frequency and the type of their revisions.

In the speaking section, students had a 10- to 15-minute interview with the examiner and were provided with assistance where needed, such as hints and direct instructions. The speaking test was composed of four sections that include (1) answering questions about their interest and experience with the target language alone, (2) independent narration of a story in the past tense accompanied with guidance and scaffolding from the examiner, (3) a role-playing in a story, and (4) a 3-minute monologue with some guiding questions from the examiner. The speaking test results were reported with scores gained through assistance and a qualitative assessment report.

The qualitative data analysis showed a rich description of the learning process as well as a good assessment of learners' actual and emergent abilities, illustrating the benefits of intervention for accurate assessment and pedagogical implications. However, Antón recognized how challenging the implementation of an interactionist DA approach could be, as she described it as "labor-intensive, time-consuming, and perhaps, difficult to carry out in large programs" (p. 592).

5.2. Advanced L2 French

Poehner (2005) conducted an interactionist DA study of oral communication among six advanced learners of L2 French at an American university to investigate the effectiveness and the application of

DA procedures to L2 learning. The study conducted one-on-one tutoring sessions, including two sets of NDA and DA sessions, an enrichment program, and two transfer tasks. In the NDA and DA sessions, participants were requested to orally narrate the story of the movie *Nine Months* in French in the past tense form. The enrichment program provided an individualized tutorial, targeting the participants' linguistic problem areas that were identified in the first NDA and DA sessions. Lastly, in the two transfer tasks, the participants composed a past-tense narrative in French of brief scenes from the movie *The Pianist* and an excerpt from *Voltaire's Candide* with mediation from the tutor.

To conduct a two-way analysis to describe interactions between the tutor and the learners, Poehner developed typologies of mediation and learner reciprocity based on the *Regulatory Scale* by Aljaafreh and Lantolf (1994). The *Mediation Typology* studies both the frequency and quality of mediation with 15 levels of the explicitness of interaction moves during DA. In addition, the *Learner Reciprocity Typology* was designed to identify the learner's developmental level using nine categories of responsibility that they took for their performance. The study concluded that NDA did not always reflect accurate learners' independent abilities, given that their abilities were underestimated or overestimated in some cases, and that mediated interactions in DA were more reliable, in the sense that a description of the actual degree of learners' difficulties was provided. DA was also effective in detecting additional problems that did not emerge from NDA and in detecting learners' improvement at a macro level. In the second DA session, the participants were more self-regulated, as they had more control over tense and aspect as well as their interactions with the mediator.

5.3. Spanish as a foreign language classroom

Davin (2016) reported an interventionist DA

study on Spanish interrogative form accuracy with a Spanish teacher and 17 novice level learners in fourth and fifth grade (aged 10 to 12) in an elementary school to explore the applicability of DA to L2 teaching, learning, and development. Based on the regulatory scale developed by Aljaafreh & Lantolf (1994), graduated pre-scripted prompts for mediation were designed in a hierarchical order from implicit to explicit, and used to draw learners' attention to the accuracy of form and to promote reformulation of learners' errors during DA sessions. In this study, the teacher was to (1) measure learners' independent performance, and (2) provide graduated prompts according to their errors until they can perform accurately by themselves.

The analysis of data from the whole group (DA) sessions and small group work in the classroom found that scripted prompts did not always serve as sufficient form of mediation, as some students needed more substantial mediation, especially for concept development. Furthermore, a microgenetic analysis provided detailed insights into how the learners' responses to mediation suggested their different ZPDs, after comparing the cases of Ivan and Wayne. Davin concluded that teachers play a major role in classroom DA, and the application of DA in the whole class would require considerable expertise from teachers and a significant amount of teacher training.

5.4. English as a foreign language

Kozulin and Garb (2002) implemented a DA procedure for a group of 23 academically at-risk immigrant students in Israel to investigate their learning potential by using English as a foreign language (EFL) reading comprehension strategies. The study employed the pretest-intervention-posttest paradigm, and the teacher provided the entire students with mediation during the group assessment in the intervention session (Kozulin & Garb, 2004).

However, the authors unfortunately failed to report how the teacher mediated all students, and it is unclear if this study follows an interactionist or interventionist approach.

The results of the pretest and posttest showed that while the students' average scores improved, the degree of their individual improvement varied, as some remained at their initial level. To estimate students' learning potential, they devised the *Learning Potential Score* formula, which calculated the gain between the pretest and the posttest to identify low and high potential students. While their procedure seemed successful in measuring students' learning potential scores, issues of reliability emerged; students' scores may be determined by the quality of mediation provided by the mediator during the assessment. Thus, different patterns of learning abilities in the same group of students might be observed with different mediation styles. The authors suggested that a future study should examine the reliability of learning potential scores obtained during DA sessions conducted by different mediators.

6. Conclusion and implications

This article reports the advancement of DA practices in L2 settings in the domain of language education. The studies reported here attempted to explore the applicability and the effectiveness of DA in L2 contexts. In these studies, DA enabled a full description of learners' linguistic abilities and learning potential; the findings identified learners' ZPD through instruction and assessment with mediated assistance and observed their shift from other-regulation to self-regulation by looking at the frequency and quality of mediation. However, not all the learners seemed to benefit from DA sessions. It is possible that the mediation in group assessment was not sufficient or tailored enough to identify their individual ZPD and respond to their individual

differences and needs for targeted tasks. It is very likely that teachers face this issue when running a relatively large class alone, which is a challenge to be addressed in collaboration with educational practitioners and scholars in the future research.

Moreover, DA sessions in the studies had varying objectives and methodologies for the purposes of their instruction and curriculum. Despite the insights from these studies being useful, their methodologies may not be applicable to other cases. DA practices are still in their infancy in the discipline, so more research both in interactionist and interventionist approaches, needs to be pursued for further development to address unsolved questions. What is called for includes a systematic study of the relationship between assessment and intervention (Elliot et al., 2018) and a revisit of the definition of language development in DA to ascertain whether learner's shift from other-regulation to self-regulation with mediation indicates language development in the ZPD.

While the studies in L2 contexts in this article indicate favorable findings for the implementation of DA, a concern arises from these DA practices; learners' achievement from DA may be affected or varied by the following variables (1) the quality and types of mediation provided by the mediator, (2) the skill and expertise of the mediator, and/or (3) the ZPD generated through the learner-mediator interaction. This concern suggests important implications for teacher education. A reliable DA session requires high levels of skill and expertise for the mediator or teacher. In fact, Davin (2016) argued that language teachers need "sophisticated knowledge of form-meaning relationships and individuals' likely progressions in learning and development related to concepts under investigation" (p. 826). However, many teachers are unfamiliar with pedagogies that include dialogic mediation to promote learner self-regulation (van Compernelle & Henery,

2015; William et al., 2013), and applying DA into their instruction is a great challenge. Therefore, I would like to suggest that teacher training at the university level could be used to empower future DA practitioners to learn how to adequately instruct and assess learners, which will help to facilitate the implementation of DA in L2 contexts and promote professional development among those involved in DA practices.

Footnotes

- 1) DA researchers use the term "static assessment" (see Sternberg and Grigorenko, 2002) to refer to non-dynamic approaches to assessment. On the other hand, non-dynamic assessment is also used among some DA researchers who believe that the term static assessment is misleading, as there are forms of assessment outside DA that are not static, such as portfolio assessment (see Lantolf and Thorne, 2006). The author takes the same position as the latter and will use the term non-dynamic to refer to all forms of assessment that are not dynamic in the sense that the concept is defined in this article.
- 2) These three are universal components of MLE. "*Intentionality* refers to the deliberate and nonaccidental character of the MLE interaction. *Reciprocity* refers to the mediator's attention to the learner's responses. The criterion of *transcendence* indicates that learning is not confined to a "here and now" experience for the learner but is always extended toward general principles applicable to other situations. *Mediation of meaning* provides the learner with a reason and affective value and significance for the interaction (Kozlin and Falik, 1995, p. 194)".
- 3) The standardized assessment instruments include the Raven Colored and Standard Progressive Matrices and the Rey-Osterreith Complex Figure Test (Sternberg & Grigorenko, 2002).

- 4) Test reliability is “measures obtained from an individual should be relatively consistent from one examiner to another (inter-rater) and from one occasion to another (test-retest)” (Elliot, 2003, p. 18).

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